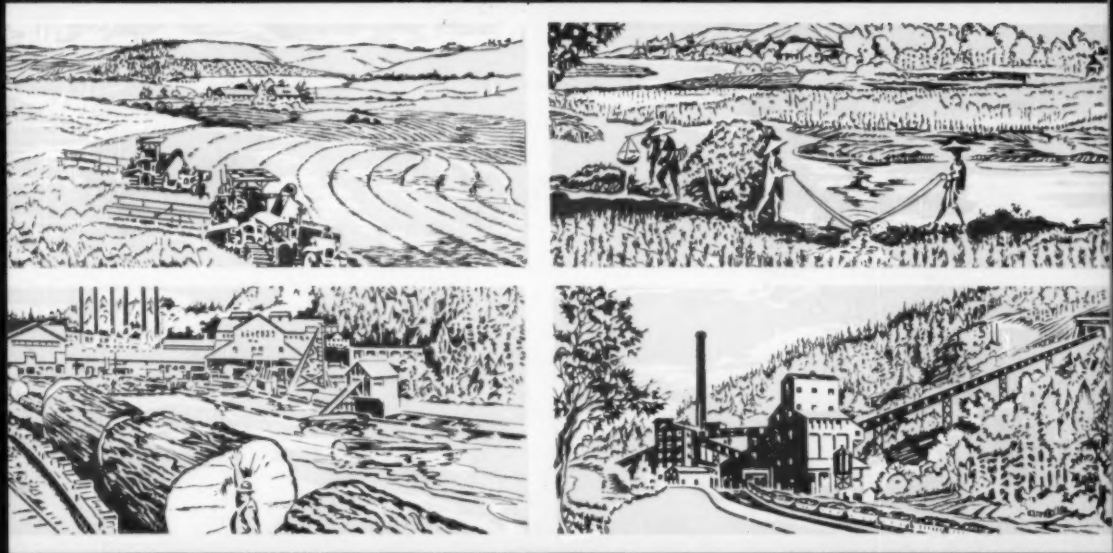
JOURNAL of GEOGRAPHY

for Teachers of
ELEMENTARY,
HIGH SCHOOL
and COLLEGE
GEOGRAPHY

Volume LV
December 1956
Number 9



PUBLISHED BY
A. J. NYSTROM & CO.,
FOR THE NATIONAL COUNCIL OF GEOGRAPHY TEACHERS
THOMAS FRANK BARTON, EDITOR

A PREFACE TO THE SOCIAL SCIENCES

By RAYMOND BELLAMY, HARRISON V. CHASE, VINCENT V. THURSBY, and SADIE G. YOUNG, Florida State University. 522 pages, $6.50

The collaboration of a sociologist, a geographer, a political scientist, and an economist has resulted in this integrated approach to the study of man in society—his interrelations with his fellows, the institutions with which he works and within which he lives, and the social problems with which he is confronted. In a survey manner, the authors cover man's relatonship to the earth and its resources, his economic life and institutions, his political life and institutions, and his social history, needs, and devices. The content is simple and unusually readable.

ENERGY AND SOCIETY

By FRED COTTRELL, Miami University, Oxford, Ohio. 348 pages, $6.00

A rare adventure in original thought. This stimulating work traces the development of civilization through the history of fuel sources and thus arrives at a measure, in terms of one key factor—energy forms and expenditures—which serves as an empiric test for solutions to the basic political, social, and economic problems of the day. It demonstrates the influence of fuels and their converters on social, economic, and political development in the past, and indicates some of the probable effects of changes in the nature and amounts of energy in the future.

SOILS AND SOIL FERTILITY

By LOUIS M. THOMPSON, Iowa State College. McGraw-Hill Publications in the Agricultural Sciences. *New Second Edition*. 468 pages, $6.50

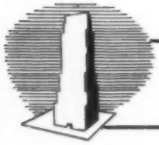
A basic college text for general soils courses in departments of agriculture thoroughly revised and updated. Particular emphasis is on the formation and classification of soils; soil fertility and the use of fertilizers; maintenance of organic matter; and soil conservation. The seventeen chapters deal with the physical, biological, and chemical properties of soils in relation to their formation, classification, and management from the fertility point of view.

AMERICAN FOREST MANAGEMENT

By K. P. DAVIS, University of Michigan. *The American Forestry Series*. 482 pages, $7.50

Here is a book combining the fundamentals of forest management and the principles and methods of valuation as applied to forest management problems. Not regionalized or localized, this systematic presentation attempts to cut through the formalism which has surrounded management methods and techniques for the past several years and encourages people to think with balance and directness about management problems. Well illustrated by specific examples, it is a valuable reference or textbook for students and professional foresters.

Send for copies on approval



McGRAW-HILL BOOK COMPANY, INC.

330 WEST 42nd STREET, NEW YORK 36, N. Y.

Mention the JOURNAL—It Assures Service

The JOURNAL *of* GEOGRAPHY

CONTENTS FOR DECEMBER, 1956

Source Material for the Geography of Australia. By B. H. Farrell .. 417

Mr. Farrell is lecturer in geography at Auckland University College, Auckland, New Zealand. He received his M.A. degree from the University of Washington and taught for a time at Southern Methodist University in Dallas. He has contributed articles to *Economic Geography* and to the *New Zealand Geographer.*

The Opaque Projector as a Teaching Aid. By M. Edith Trussell .. 425

Miss Trussell is an instructor in social studies in North High School, Bakersfield, California. She did her undergraduate work at the University of California at Berkeley.

Seven at One Blow. By Alan P. Mewha 429

Dr. Mewha is head of the Department of Geography, State Teachers College, Indiana, Pennsylvania and is a frequent contributor to educational magazines.

The Legend of Timbuktu. By Benjamin E. Thomas 434

Dr. Thomas is Associate Professor of Geography in the University of California, Los Angeles. He is the author of numerous articles on the geography of trade and transportation in Africa.

Tobacco Production: Vuelta Abajo Region, Cuba. By Luella N. Dambaugh 442

Dr. Dambaugh is Professor of Geography at the University of Miami. Her major interest is social-economic geography of Latin America and the world. She has conducted numerous field trips in the Latin America area.

The St. Lawrence Seaway—Its Development and Economic Significance. By Kenton W. Morris 447

Major Morris is now stationed at Albuquerque, New Mexico. His interest in this particular subject was primarily the result of a course in economic geography pursued at the Montgomery Center of the University of Alabama. He was then a student at the Maxwell Air Force Base.

The National Council at Work. By Norman Carls 454

Geographical Publications 456

Contents of the JOURNAL are indexed regularly in the *Educational Index to Periodicals.*
Authors alone are responsible for opinions and statements in the JOURNAL.

PRINTED IN THE U.S.A.

The JOURNAL *of* GEOGRAPHY

THOMAS FRANK BARTON, *Editor* (On leave)
GEORGE J. MILLER, *Acting Editor*
JACK C. RANSOME, *Assistant Editor*
Indiana University, Bloomington, Indiana

Associate Editors

EARL B. SHAW, State Teachers College, Worcester, Mass.
NEVILLE V. SCARFE, University of British Columbia, Vancouver
R. S. FUNDERBURK, Central Washington College of Education, Ellensburg
MARY VIOLA PHILLIPS, New Kensington Senior High School, Pennsylvania
ZOE A. THRALLS, University of Pittsburgh
HENRY J. WARMAN, Clark University
CLYDE F. KOHN, Northwestern University
OTIS W. FREEMAN, State Teachers College, Indiana, Pennsylvania
MAMIE L. ANDERZHON, William Beye School, Oak Park, Illinois
LORRIN G. KENNAMER, University of Texas

National Council of Geography Teachers

NORMAN CARLS, *President,* University of Pittsburgh, Pennsylvania
JOHN W. MORRIS, *Secretary,* The University of Oklahoma, Norman, Oklahoma

---

SUBSCRIPTION TERMS

The subscription price is **$4.00** a year payable in advance. The price of single copies is 50 cents. Postage prepaid on subscriptions from the United States, Canada, Canal Zone, Republic of Panama, Puerto Rico, Cuba, Virgin Islands of the United States, Dominican Republic, Philippines, Guam, Samoan Islands, Hawaii, Mexico, Costa Rica, Guatemala, Nicaragua, Republic of Honduras, Salvador, Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Uruguay, Spain and Spanish Colonies. All other countries in the Postal Union add for postage 45¢ on annual subscriptions (total $4.45), on single copies 5¢ (total 55¢). All subscriptions are payable in United States Dollars.

The JOURNAL is the official organ of the National Council of Geography Teachers and is sent to all members. The annual dues, $4.00, are payable to the JOURNAL OF GEOGRAPHY. Extra postage rates for copies sent to foreign countries should be added to the membership dues. Make all remittances payable to the JOURNAL OF GEOGRAPHY, in postal or express money orders or bank drafts.

Send manuscript and books for notice or review to the Editor.
Send orders for back numbers to JOURNAL OF GEOGRAPHY.

Published monthly except June, July and August
PUBLICATION OFFICES: 450-454 AHNAIP STREET, MENASHA, WISCONSIN
Business Correspondence, Membership Dues, and Subscriptions may be sent to Publication office or to

A. J. NYSTROM AND COMPANY
PUBLISHERS, JOURNAL OF GEOGRAPHY
3333 ELSTON AVENUE, CHICAGO 18

Entered as second-class matter January 15, 1919 at the post office of Menasha, Wisconsin under the Act of March 3, 1879.

JOURNAL OF GEOGRAPHY PRIZE TO AUTHORS

Annually a Geographic Education Prize of $25.00 is awarded for outstanding articles published in the JOURNAL. In the even numbered years the prize is for the Elementary level and in the odd years for the High School level.

HOLT TEXTS

Smith, Phillips, Smith
INDUSTRIAL AND COMMERCIAL GEOGRAPHY
FOURTH EDITION

Wheeler, Kostbade, Thoman
REGIONAL GEOGRAPHY OF THE WORLD

Durand
WORLD GEOGRAPHY: An Introduction

Gottmann
A GEOGRAPHY OF EUROPE
REVISED

for fall 1957 publication:

Gottmann
POLITICAL GEOGRAPHY

Henry Holt and Company
383 Madison Avenue, New York 17, N.Y.

Stimulate interest with a . . .

GRAPHIC PROJECT GLOBE

A nameless metal globe with a markable base surface . . . blue for water, brown for land. By drawing or constructing on its surface, teachers find that they can focus the attention of the students on the main points of the lesson. Serves as an invaluable aid in developing global concepts.

- Chalk, tempera or clay may be used on the surface.
- Available in floor or table stands . . . 16 or 22-inch globes.
- Effective for motivation, presentation, review, tests and students projects.

SEND FOR FREE BOOKLET JG12

BETTER MAPS A.J.NYSTROM & CO. GLOBES CHARTS

A. J. NYSTROM & Co. 3333 N. Elston Avenue CHICAGO 18, ILLINOIS

The JOURNAL *of* GEOGRAPHY

Copyright 1956, by the National Council of Geography Teachers

VOLUME LV DECEMBER 1956 NUMBER 9

SOURCE MATERIAL FOR THE GEOGRAPHY OF AUSTRALIA

BRYAN H. FARRELL
Auckland University College, Auckland, New Zealand

A major difficulty associated with teaching the geography of an overseas country is to find authoritative, detailed and illustrative material to supplement the more general information gathered from textbooks. This problem very often confronts a teacher preparing a course in the geography of Australia.[1] The titles of a variety of Australian publications are mentioned in this paper in the hope that in some measure these difficulties might be met. The publications, some of which will be of use at most levels of geography teaching, are listed under several headings for the purpose of convenience and to serve as a rough sorting device and a guide. It will be seen that the categories chosen are by no means mutually exclusive and that some items would fit as easily into one category as they would into another.

GENERAL MATERIAL

One of the best summaries of the continent's systematic physical geography (together with the most significant aspects of its agriculture) is *The Australian Environment,*[2] a handbook prepared from the British Commonwealth Specialist Agricultural Conference on Plant and Animal Nutrition in Relation to Soil and Climatic Factors, held in Australia in 1949. The book includes chapters on climate, soils, landforms, agricultural history, water conservation and irrigation, vegetation, pastures, crops and live-

[1] It is not the intention of this paper to discuss texts such as Griffith Taylor's *Australia* (London, 1943) that have been published outside Australia and are available in many countries, or such well known works as *Land Utilization in Australia* (Melbourne, 1950) by S. M. Wadham and G. L. Wood.

[2] Commonwealth Scientific and Industrial Research Organisation, 314 Albert Street, East Melbourne, C.2., Victoria, 1950, 183 pp.

stock in Australia. In addition, there are useful maps in color, diagrams, photographs and selected references.

Of a less technical nature and embracing most aspects of Australian life is *Australia: Official Handbook.*[3] This brief bulletin which is periodically brought up-to-date serves a useful purpose as a ready reference on current conditions and on the more significant facts concerning the Commonwealth. The same association distributes several other worthwhile publications among which are the pictorial *The Australian Scene,* outstanding for fine photography and *Urban Australia.*

Of particular interest to the geography teacher at all stages is John Andrew's *Australia's Resources and their Utilization: Parts 1 and 2.*[4] Part 1 touches briefly on Australia's resources generally, the pattern of rural development, sheep and wool, wheat, the Tropic North, forestry, dairying and other specialized forms of agriculture. Part 2 is concerned with population, mining, manufacturing, tertiary industries, possible developments and general conclusions. These two excellent short bulletins contain maps, grafs, and photographs as well as well-chosen questions and problems for discussion.

A short outline of the agriculture of Australia is given in *Australian Rural Industries: A Graphic Presentation.*[5] Altho a portion of the space is allotted to a description of various aspects of Australian agriculture, the book's most important contribution is its over ninety maps and charts.

Periodicals

The Australian Geographer,[6] a basic source of geographical information, covers a wide range of topics and gives an indication of current geographic research within the country. Most other periodicals in this section are of a popular nature.

Formerly published as *The Regional Development Journal, National Development*[7] is a well illustrated, up-to-the-minute mag-

[3] Australian National Publicity Association, Railway Buildings, Flinders Street, Melbourne, approximately 150 pages.

[4] The Dept. of Tutorial Classes, University of Sydney, Sydney, 1954, revised 1956, each part approximately 74 pages. Price 3/-Australian each part.

[5] Rural Bank of New South Wales, Martin Place, Sydney, 1948, 144 pp.

[6] Volume 1, 1928, Geographical Society of New South Wales, Science House, Gloucester St., Sydney.

[7] Published quarterly, Ministry of National Development, Canberra. Subscription 10/- Australian per annum to The Accountant, *National Development,* Box 4361, G.P.O., Melbourne.

azine dealing with agriculture, industry and various aspects of population. As the editorial policy states *National Development* is devoted exclusively to the study of "Australia's economic and social resources." It contains for the most part first-class teaching material, as does *Walkabout* (The Australian Geographical Magazine).[8] Of a somewhat similar nature to both these magazines is *Southwest Pacific,*[9] the purpose of which is to provide a background to the "Australian way of life."

Much useful information, very often of a more limited nature, can be found in several company magazines. As an example, various aspects of air transport in Australia, especially in relation to settlement and farming, appear in *Air Travel.*[10]

AREA SURVEYS

Few countries are as aware as Australia is of the need for an immediate resource inventory if future planning is to be possible, and in few countries have government agencies produced such useful regional surveys over such wide areas.

Resources Surveys,[11] a bulletin essential to any university geography department or library attempting to establish a research section on Australia, gives an excellent guide to current and completed surveys of resources, mapping and other associated publications.

As a result of specialist team surveys in tropical Australia C. S. Christian (*et al*) have produced three bulletins in the new *Land Research Series.*[12] These are: *Survey of Katherine-Darwin Region 1946,*[13] *Survey of Townsville-Bowen Region 1950,*[14] and *Survey of Barkly Region 1947-48.*[15] The surveys contain information on climate and agriculture, geology and geomorphology, soils, vegetation, land systems and land use. There is a section on

[8] Published monthly, Australian National Publicity Association. See footnote No. 3.

[9] Commonwealth Department of Information, Canberra, A.C.T.

[10] Australian National Airways Pty. Ltd., 390 Flinders St., Melbourne.

[11] *Issue No. 1,* Department of National Development, Canberra, December, 1953, 76 pp. For further information: The Director of Regional Development, Department of National Development, G.P.O. Box 10, Canberra, A.C.T.

[12] Published by the Commonwealth Scientific and Research Organisation, Melbourne. See footnote No. 2.

[13] *Land Research Series No. 1,* C.S.I.R.O., Melbourne, 1952, 177 pp.

[14] *Land Research Series No. 2,* C.S.I.R.O., Melbourne, 1953, 193 pp.

[15] Published as extracts from original report, *Land Research Series No. 3,* C.S.I.R.O. Melbourne, 1952, 55 pp.

conclusions and recommendations as well as maps of geology, land systems and land use groups.[16]

During 1950-51 the Division of Regional Development of the Department of National Development prepared brief surveys of the resources and development of various regions.[17] Separate bulletins cover the Clarence and Upper Murray regions in New South Wales, Goulburn, Upper Murray and Glenelg regions in Victoria; Capricornia, Burdekin, Northern and Gulf regions in Queensland; Gambier in South Australia; Albany and the Southwest regions in Western Australia and the Northern Region of Tasmania.

During 1952 the same Commonwealth Department issued, *Report of the Murray Valley Resources Survey Committee on Resources and Developments of the Murray Valley.*[18] This published report of Commonwealth-State investigation is probably the most comprehensive survey of the Murray Valley ever to have been published. Besides an introductory summary it contains information on geology, minerals, soils, climate, vegetation, timber, water and fisheries, and almost two-thirds of its pages are devoted to "economic resources." Population, employment, land use, primary and secondary industries, public utilities, transport and tourism are some of the headings in this latter section. A bibliography and statistical tables are included. The second volume of this report includes an atlas of twenty maps and a gazetteer.

New South Wales has been divided into twenty planning regions. Fifteen of these regions have been covered by resource surveys published by the State of New South Wales.[19] The following regional surveys have been published: *Richmond-Tweed* (1945), *Clarence* (1945), *Central Murray* (1947), *Upper Murray* (1947), *Macquarie* (1948), *Illawarra* (1948), *Monaro-South Coast* (1949), *Southern Tablelands* (1949), *Lachland* (1949), *Murrumbidgee* (1949), *Namoi* (1950), *Newcastle* (1950) and *New England* (1951).[20] In general, these regional reports include such aspects of an area as historical background, physical geography, agriculture,

[16] Each bulletin is not organized in exactly the same way nor will each individual bulletin contain *exactly* those sections mentioned above.

[17] See footnote No. 11.

[18] Volume 1, Department of National Development, Canberra, 1947, 369 pp.

[19] *Oxley* (1952) and *Upper Hunter* (1952) are the two surveys most recently published. Year of compilation is placed in parentheses.

[20] Division of Reconstruction and Development, Premier's Department, Cnr. Macquarie and Bridge Streets, Sydney, approx. 45-200 pp.

mining and other economic activities, population and employment, and a bibliography of relevant literature. Altho maps are prepared for each survey, a set of maps does not always accompany each individual bulletin. On the other hand some bulletins are lavishly provided with worthwhile maps.

The Victorian Government has published six area reports which, at least in the organization of material, are similar to the New South Wales surveys previously mentioned. These reports are *Goulburn* (1948), *Upper Murray* (1949), *Upper Goulburn* (1951), *Loddon* (1952), *Mallee* (1953) and *East Gippsland* (1954).[21] The same authority has published material in connection with planning and development in the Latrobe Valley, a most important section of Victoria.[22]

A series of fifteen brief, and rather superficial reports concerned with Queensland regions appeared in *Economic News*[23] between January, 1952 and June, 1953.[24] The following surveys have been published: *Central Highlands, Western Downs, Maranoa, Border Plains, Southern Downs, Central Downs, Warrego, Western Plains, Wide Bay, Capricornia, East Moreton, Pioneer Region, Port Denison* and the *Burdekin Region.* Each report contains general information on the physical geography of each area, on agriculture, population, secondary industries and transport. Small scale location maps accompany articles, but these sketch maps are inadequate in providing detail or for sufficiently illustrating textual material.

OFFICIAL PUBLICATIONS

It is possible to mention only a few of the publications of government agencies useful to geographers. For this reason only material that is of particular interest is mentioned. Several published works of the Commonwealth Scientific and Industrial Research Organization have already been mentioned. This organization will supply on application, a list of its publications including pedological studies.[25]

[21] Published by the Central Planning Authority, Premier's Department, Melbourne, Victoria.

[22] See issue under name of Town and Country Planning Board, 1949 and also publications of State Electricity Commission, of Victoria.

[23] Published monthly, Queensland Bureau of Industry, Brisbane, Australia.

[24] Volume 21, No. 1; Volume 22, No. 6.

[25] See footnote No. 2. A recent most useful publication is W. A. Beattie's "A Survey of the Beef-cattle Industry of Australia" *Bulletin No. 278,* Melbourne, 1956.

The *Quarterly Review of Agricultural Economics* contains predominantly economic information about primary production in Australia in the form of articles, grafs and a section on agricultural statistics.[26] Other worthwhile publications of the Bureau of Agricultural Economics include *Rural Australia: A Graphical Summary* (1952), *Report on Beef Cattle Industry in Northern Australia* (1952), *Merino Wool Growing, Armidale District, N.S.W.* (1951), *Regional Studies of the Australian Woolgrowing Industry: 1. A.C.T. 2. Longreach-Blackall District, Statistical Handbook of the Sheep and Wool Industry* (1949, Supplement 1951) and surveys of various rural industries.[27] Of a somewhat similar nature, but mainly with emphasis on aspects of primary production in New South Wales is *Review of Marketing and Agricultural Economics*.[28] Much material on agriculture is published by the various state departments of agriculture,[29] all regularly publish an agricultural journal. Similarly useful information is contained in the annual reports and other publications of State Irrigation and Water Supply Commissions. Aspects of agriculture in the Northern Territory are given in the various pamphlets and cyclostyled mimeographed statements of the Department of Territories, Canberra.

The annual reports of the State Electricity Commissions[30] and the publications of the Joint Coal Board[31] provide valuable material on power resources and their utilization. Other resources

[26] Commencing January, 1948, Bureau of Agricultural Economics, Department of Commerce and Agriculture, Canberra, A.C.T., approximately 40 pages. Other periodicals of the Bureau include *Wool Outlook* (annually), *Wool Situation* (quarterly), *Wheat Situation* (half-yearly), *Dairy Situation* (annually), *Beef Situation* (annually) and *Pigmeat Situation* (half-yearly).

[27] Bulletin No. 5, *The Australian Potato Industry* (1949), Bulletin No. 6, *The Tasmanian Apple and Pear Industry* (1950), Bulletin No. 8, *The Tasmanian Berry Fruit Industry* (1952), Bulletin No. 10, *Fat Lamb Survey* (1953).

[28] Published quarterly, Division of Marketing and Agricultural Economics, Department of Agriculture, Sydney, New South Wales.

[29] Victoria, Treasury Gardens, Melbourne; Western Australia, Saint George's Terrace, Perth; Tasmania, Box 673c, G.P.O. Hobart; South Australia, Agricultural Building, 133-37 Gawler Place, Adelaide; New South Wales, Fanner Place, Sydney; Queensland, Department of Agriculture and Stock, Brisbane.

[30] Victoria, 22-32 William Street, Melbourne; Queensland, Scottish Union House, Eagle Street, Brisbane; New South Wales, Kelvin House, 15 Castlereagh Street, Sydney; South Australia, Kelvin Building, North Terrace, Adelaide; Western Australia, 132 Murray St., Perth; Tasmania, Box 631-B G.P.O., Hobart.

[31] 66 King Street, Sydney.

are covered in the pamphlets and reports of the Bureau of Mineral Resources.[32]

STATISTICS

Statistical information is provided by the respective government statistician within each state. Wider coverage is given by the Commonwealth Bureau of Census and Statistics.[33] The following are some of this department's publications: *Demography* (yearly), *Monthly Bulletin of Employment Statistics, Monthly Bulletin of Production Statistics, Monthly Bulletin of Overseas Trade Statistics, Australian Balance of Payments, Statistical Bulletin: Livestock Numbers, A Summary of Rural Land Use and Crop Statistics* (yearly), *Summary of the Fruit Growing Industry in Australia* (yearly), *Primary Industries: Part I Rural Industries, Part II Non-Rural Industries and Value of Production* (yearly), *Statistical Summary: The Wheat Industry, Secondary Industries* (yearly) and *Statistical Bulletin: Minerals and Metals* (quarterly).

MISCELLANEOUS

Many issues of *Current Affairs Bulletin*[34] contain recent material invaluable to the teaching of the geography of Australia. Each pamphlet is devoted to a single article, many of which are illustrated with maps and diagrams.

These are some of the titles that would prove most useful: *Australian Steel,*[35] *The Murray Valley,*[36] *South-Western Australia,*[37] *Australian Forestry,*[38] *Southern Tablelands—N.S.W.,*[39] *Gippsland,*[40] and *Northernmost Queensland.*[41] Other bulletins deal with soil erosion, gold, wool, forestry, the Snowy River Project, Australian fisheries and food production.

[32] 485 Bourke Street, Melbourne, especially *The Australian Mineral Industry* (quarterly).

[33] West Block, Canberra.

[34] Published fortnightly, Tutorial Classes Department, University of Sydney. Approximately 14 or 15 pages. Price of individual copies 6d, yearly subscription 12/6d.

[35] Volume 12, No. 9, August 17, 1953.

[36] Volume 11, No. 1, October 20, 1952.

[37] Volume 14, No. 10, August 30, 1954.

[38] Volume 10, No. 1, April 21, 1952.

[39] Volume 15, No. 10, February 28, 1955.

[40] Volume 16, No. 12, September 26, 1955.

[41] Volume 12, No. 12, September 28, 1953.

Various banks produce periodicals or issue special publications. These contain much valuable information on the economic aspects of agriculture and secondary industries. Besides its special publications, the Commonwealth Bank of Australia has prepared surveys of regions in South Australia and Victoria.[42]

Trends, published by the Rural Bank of New South Wales,[43] the *Quarterly Survey* of the Australia and New Zealand Bank,[44] and the *Review* of the Bank of New South Wales[45] provide useful information of a limited scope.

Publications concerned with manufacturing in Australia are issued from time to time by the Division of Industrial Development of National Development at Canberra. In 1952 this department published a useful reference, *The Structure and Capacity of Australian Manufacturing Industries*. This encyclopedic work contains seventeen chapters each of which systematically studies a specific industry. As well, it has a comprehensive index and a summary of basic statistics at the end of each chapter. Excellent information on mining and the iron and steel industry is published by the Broken Hill Proprietary Company and the Zinc Corporation Limited both of Melbourne. The latter company is concerned with the mining and processing of non-ferrous metals.

New material of interest to geographers is noted in *Australian Social Science Abstracts*,[46] "a survey of important material, published in or related to Australia, New Zealand and their territories" and in the *Annual Catalogue of Australian Publications*[47] which contains an extensive section of official state and commonwealth publications. It is not intended to provide in this outline of sources a comprehensive bibliography of Australian literature. Many fine publications of a more specialized nature have been omitted.[48] Much official government material has not been men-

[42] Commonwealth Bank, Melbourne, Victoria.

[43] Published quarterly. See footnote No. 5.

[44] General Manager's Office, Australia and New Zealand Bank, Ltd., 394 Collins Street, Melbourne, Victoria.

[45] Published quarterly, Economic Department, Bank of New South Wales, 341 George St., Sydney, New South Wales.

[46] Published half-yearly by Social Science Research Council of Australia. Editor's address, c/o Faculty of Economics and Commerce, University of Melbourne, Carlton, N.3, Victoria.

[47] Commonwealth National Library, Canberra. Price 2/- a volume. First published 1936.

[48] Space does not permit a discussion of maps obtainable in Australia. Two atlases, however, must be noted: The *Atlas of Australian Resources* and the *Regional Planning*

tioned.[49] It has been the aim in this paper to give only an indication of some of the publications available to teachers in countries outside Australia and thereby in some measure partially to resolve the problem of finding adequate source material concerning Australia.

THE OPAQUE PROJECTOR AS A TEACHING AID

M. EDITH TRUSSELL
North High School, Bakersfield, California

In geography classes, we often use materials such as postage stamps, pictures, maps, charts, and grafs, which are small, detailed, and consequently difficult for a large class to see. The opaque projector is conducive to optimum use of these materials. It is the purpose of this article to consider some uses of the opaque projector in teaching geography.

CHOICE OF MATERIALS

The opaque projector reproduces on a screen the image of an opaque material such as a picture. Simple to use, it can project almost any flat material, mounted or unmounted, of a size and bulk small enough to fit it. Books, magazines, and other flat materials with page sizes up to 9″ by 10″ can be used in the projector which our school has. Materials slide in and out of the projector easily on a movable belt or on a tray; both are provided, and they can easily be interchanged.

The size of the image depends upon the distance of the projector from the screen, but a picture 9″ by 10″ can be enlarged to fill a 4½′ by 5′ screen in the average length classroom. The projector can be used with an ordinary screen in a room sufficiently lighted so that students can see to read and write and thus, take notes or correct papers from the materials shown. General suggestions for

Atlas: Economic Resources of Tasmania (State Economic Planning Authority, 1947). In connection with the former see Konrad Frenzel "The Atlas of Australian Resources" *The Australian Geographer* Volume 6, March, 1953 p. 6 and *Resources Surveys, op. cit.* p. 60. The atlas is distributed by Angus and Robertson Ltd., 89 Castlereagh Street, Sydney. For revisions to the Tasmanian atlas see *Resources Surveys, op. cit.* p. 68.

[49] For information on a specific topic (forestry, railways, road transport, etc.) the appropriate department of the Commonwealth and State governments will usually supply published material, if it is available.

all materials to be prepared for the projector are: 1) they are easier to use if they are mounted on stiff paper, since the blower in the projector will otherwise move them around as they are inserted; and 2) color enhances materials used in the projector and should be an important consideration in their preparation and choice.

Teacher Use

We have found the projector a valuable addition to instruction particularly in the following activities: presentation and correction of materials; preparation of bulletin boards and posters; presentation of student work. In addition to the obvious value of having everyone see the materials, increased motivation of the class is a result of use of the projector. Especially with student work, a great interest in the "new" method makes an important contribution to the success of the activity.

The projector can be used to particular advantage to correct grafs and maps. The "correct copy" is projected on the screen, and a pointer is used to show the features which are to be checked. This method of correction has two important advantages over teacher-correction of material: 1) the students learn what the correct material looks like and go over the work with the correct answers in mind; and 2) careful correction is facilitated when each person checks, point by point, one copy rather than when the teacher checks a large number of copies.

In correction, it is necessary to use an organized approach, pointing out each feature in turn. The teacher may find it advantageous to employ a check list for this purpose.

Large maps, pictures, charts and other materials, are frequently needed for bulletin boards, posters, and displays, and the opaque projector can be used in preparing these. Put the paper for the final copy on a convenient smooth wall; project the image on the paper to be used for the copy; move the projector to obtain an image of the desired size; and trace the lines on the paper. Maps of this type can be used as the basis of electric maps, product maps, relief maps, as well as for bulletin boards.

Student Use

Students like to use the opaque projector to show materials which they have prepared. The advantages of this use are that stu-

dents can present their own work to the entire class and that the unique method of presenting the work arouses a lively interest in the reports and provides a variation in the class activities. For this purpose, optimum results are obtained if one student is taught the use of the projector and then helps to run it for every students who uses it in his report.

Students in ninth grade geography classes at our school recently prepared reports on foreign countries, each student choosing a country which interested him. The reports were illustrated with pictures, drawings, maps, etc. and were to be presented as scrap books, material strips* suitable for use in the opaque projector, or as "slides" also for use in the projector. When reports were first considered, we listed sources of information, discussed methods of presenting the materials gathered, and experimented with the opaque projector to see how materials are put into it, what size they should be, and how they should be prepared for use with it.

Material Strips. Several students prepared their reports in the form of scrolls or material strips to be run thru the opaque projector and shown to the class as a travelogue. One student prepared his report in the form of slides which could be put into the projector and used in much the same way as the scrolls. Reports used with the projector proved very interesting to the classes concerned.

A definite sequence of steps should be followed in preparing material strips for this purpose. First, the opaque projector is used to determine the width of paper needed for the strip and the size of frames to be used. It is important that this be done first, because the maximum size of the materials for the scroll is determined by the size of the frame which the projector will show. Second, the theme for the scroll is decided upon, and materials (pictures, grafs. maps, captions, text), are collected and arranged. Original work by the students can be included very effectively with other collected materials in preparing a scroll. The student's work can be done on a separate piece of paper and attached to the scroll just as the other materials are, or it can be done directly on the scroll. If the student's work is included in a separate frame from commercially produced colored pictures, it is generally more effective, because the different intensity of color

* Thomas Frank Barton, "A Geographic Materials Strip." THE JOURNAL OF GEOGRAPHY, Vol. LIV (March, 1955), p. 140.

is not particularly noticeable from one frame to the next, tho it would be noticeable if both pictures were included in the same frame.

Students should be cautioned about length of the text. The purpose of the text in a report of this nature is to provide continuity and to explain the materials. "Wordiness" tends to detract from the report, so the need for a short concise text and captions should be emphasized.

If all preparations have been done carefully, the task of completing the material strip is not difficult. To finish the material strip, cut a long strip of paper for the scroll (we found a roll of shelf paper which was the right width); mark off the number of frames needed leaving two inches between frames and twelve inches at each end; then attach the materials to the scroll. In attaching the materials, paste each to the scroll then scotch tape all edges to the scroll to prevent the materials from catching as they run thru the projector. The use of staples in fastening materials is not advised.

In showing the material strip, the beginning is threaded into the projector, and the scroll is wound thru frame by frame on the movable belt. We assigned one student to feed the scroll into the projector, one to roll it up as it came out, and the author of the material strip to explain his report as it was shown.

Material Slides. Material slides are much like material strips but have the advantage that the sequence can easily be changed and slides added or eliminated after the report is finished. However, these have the disadvantage of being more difficult to use because each must be inserted separately into the projector. To prepare material slides: 1) get stiff paper to use for the base of each slide; 2) mark off the frame size on the stiff paper; 3) decide upon theme and sequence of materials; 4) paste pictures, write captions and text, on slide bases; 5) scotch tape edges of materials to slide bases. It is the opinion of the author that students are less reluctant to try to make material slides than they are to make material strips. However, material strips are more satisfactory than are the slides when actual use of the material is concerned.

Cartoons. Cartoons are always fun, and the opaque projector adds greatly to their effectiveness. Many teachers have suggested the use of student prepared cartoons illustrating political developments, shapes of countries, names of countries, and so on. Recently, students drew cartoons illustrating the names of capital

cities. Simple examples of this are "Washington" which is illustrated by a line full of washing and a 2,000 lb. weight, and "Rome" illustrated by historical figures which the student felt would bring to mind activities in Rome.

After all classes had contributed cartoons, the best were selected, shown in the projector, and students tried to guess the names of the capitals represented. A note to the wise: Be sure that the name of the capital is written on the back of the cartoon; some of these are fanciful!

The student activities cited above were successful with students of both high and low abilities in geography. Altho the best reports (material strips and material slides) were turned in by students of high ability, those of limited ability turned in some very good reports. Some of the best cartoons turned in, judged on a basis of both artistic merit and originality, were from students whose verbal abilities are quite limited.

SUMMARY

The opaque projector is particularly useful in teaching geography because it: 1) facilitates the use of small detailed materials not available in classroom quantity; 2) provides a large copy of the materials being used, thus making it possible to point out features to be noticed or checked; 3) stimulates interest thru providing a different way of presenting materials; and 4) makes possible rapid copying of materials to be enlarged.

SEVEN AT ONE BLOW

ALAN P. MEWHA
State Teachers College, Indiana, Pennsylvania

The little tailor of folklore fame was less entitled to that fame than the modern professor of geography in our teachers colleges and in many liberal arts colleges. Whereas the little tailor killed seven flies at one blow and parlayed that accomplishment into the hand of the king's daughter and half the kingdom, the modern geography professor is given little recognition for the monumental job he is doing or is trying to do. At one and the same time he is teaching geography to students from as many as seven or more widely differing academic interest groups.

Our geographical giant-killer faces the above situation because most college undergraduates are required to take at least three semester hours of geography. Admittedly geography should be included in all curricula, but is it necessary that all students of every curriculum take the same gruel of so-called "fundamentals"? The same course, the same instruction, the same text are used for all curricula. The result is that neither the liberal education and citizenship training for the non-geographer nor the technical training necessary to the geography major is reached as an objective. With no definite objective, the course loses its vitality and appeal. The real values which a geography-conscious citizen could use are lost as well as the basic foundation upon which to build research in geography.

Frustration for Geography Majors and Non-majors

Let us look at what a typical professor in a typical teachers' college must face in the course of one day's instruction. At one and the same time there may be before him students from several curricula and in a single day from as many as seven different areas of primary interest. One group may be music majors who have been required to take geography to broaden their education. As the course proceeds thru the "fundamentals" of map projection, causes of the seasons, and climatic phenomena, their initial interest wanes and the course becomes a dull and wearying task for both instructor and student. Thus in a course dealing with much of the physical inspiration of the world's great music little use is made of an opportunity to help these musicians get a deeper and rewarding awareness of their physical environment. Another group may be English secondary majors who see nothing in geography remotely related to their subject, especially since, according to the syllabus, we must teach the "fundamentals" of cyclones and anti-cyclones. A third group might be health education majors, who in spite of the many possible applications of geography to that field, are given little opportunity to see geography other than as a course full of place names and the ever-present "fundamentals."

Three other groups are equally frustrated. From among any of the groups cited may be some men who have had long years of experience in the armed forces. These individuals bring to the class information and experience which could and should be of help to both the instructor and to fellow class-mates. With the instructor following the same pattern for this group as for the others, the ex-GI substitutes sometimes supercilious attention for active reliv-

ing of his experiences, subject to the instructor's expert geographical analysis. Elementary majors listen with horror as the geography instructor delves into the intricacies of the physics of meteorology and hydrology. Relative humidity, absolute humidity, coriolis force, and Buys-Ballots law are important for the next test but seem to have little relation to getting little Johnny of the fifth grade to understand how other people live. The secondary social studies major, who above all should recognize his need for geography, again has no desire to master the "fundamentals." To that social studies major, the fundamentals are the human relationships. From geography he could draw a wealth of understanding of the differences between the various cultures of the world. To this future social studies teacher it certainly seems less fundamental to know the four causes of tropical deserts than to understand the effect of petroleum exploitation on the feudal kingdoms of the Arabian peninsula or to appreciate how that same petroleum keeps the Middle East in constant turmoil of international intrigue.

The above analysis leaves only one group which might be happy —the geography major. But he is not too happy either, because, finding himself seeded in with a majority of non-majors, he finds that the fundamentals which he expects to receive as a foundation for future work are often so toned down and simplified as to make the course seem elementary. As an embryo geographer he may also get the impression that the field of geography is much easier than it really is. By the time the geography major is taking more advanced work, he realizes the weakness of his geographic foundations and must catch up on the "fundamentals" while doing the more difficult assignments.

The obvious answer to meeting the differing needs of the various groups cited above is to have separate classes for each group, with appropriate instruction, textbook, and syllabus. It is just as obviously an impractical solution. We must face the seven problems as the tailor faced the flies—all at once. The real question is how can we face all at once and still do an effective job with each group? The answer lies partly in the organization of each class by the instructor and partly in the extra-curricular program offered by the department.

CLASS ORGANIZATION AS A SOLUTION

Within the course, the instructor can take cognizance of the differing needs and interests of the members of his class. Since, in actual practice, the classes are made up of a majority of one group

or another, the needs of the larger group may well be met in class discussion. Special assignments may be given to the minority groups. Music students might be assigned the task of finding songs which fit the various countries studied. A song might even be taught to the class. An English major might analyse the geographic contents of a work of literature.[1] A science major could easily use his enthusiasm for that subject to develop an experiment or exhibit of some scientific principle which he feels to be important. The elementary major could be asked to find how much geography must be taught by her, when she starts teaching her chosen grade. Many will be surprised at the need for our beloved "fundamentals." The geography major, if in the minority in a classroom, should be given more responsibility and even extra, tho perhaps informal, tests to prove that he is receiving the full impact of both scientific and social geography. In addition to the required and more generalized test, he might also be given assignments in one of the geographies which stresses the physical fundamentals.

Extra-curricular Activities as a Solution

It is in the field of extra-curricular activities that the geography department can consolidate the interests of its "seven flies" and at the same time strengthen and develop the individual interests of the members of each group. By forming committees from classes in the smaller departments and from the geography club in the larger ones, a self-initiating, self-sustaining, and self-reproducing activity can be maintained by a relatively small staff. As a case in point, a geography movie program, showing more than fifty chosen films a year to an average of more than sixty students a week is now run entirely by the students at one Teachers College. The students of the movie committee preview the films, using an evaluation sheet which they had originated, project the films, instruct others in projection, give geographic interpretation to the group, lead discussions and supervise shorter evaluations made by each member of the audience. The instructor does little more than order the films. With the proprietary interest so engendered, most of the emergencies are met before they come to the attention of the instructor. In addition to gaining geographic information from the films, the student projectionists learn how to operate a projector under almost any conditions, gain confidence thru group leader-

[1] Richard N. Bowler, "The Factor of Place in Literature." Journal of Geography, Vol. LIV (November, 1955), p. 399.

ship, and learn to take responsibility. The geography department gains in being able to offer the movie program to the school and in having other courses elected by members of the movie audience or the projectionists. This committee is self reproducing in that there is always a leader being trained by the present leader to replace himself at the end of the year. The movie committee seems to have aroused the special interest of the elementary group toward more active participation in departmental affairs.

In much the same manner have tutoring committees, field trip committees, and weather station committees been organized. Since students come to them for help from any of several instructors, the student-tutors must gain a thoro knowledge of the "fundamentals" of geography as well as the idiosyncracies of the various instructors. Former tutors who have gone on to graduate work in geography have stated that this part of the program was the most valuable experience they had had in undergraduate training. Material important to them as geography majors may have been passed over rather quickly in the freshman course. By the time the same material has been taught and retaught to unsure freshmen, the tutor really knows it. Altho the tutoring program has greater appeal to upper classmen, qualified freshmen are permitted to tutor and are proud of the privilege.

Without going into detail on the other committees, it is evident that such committee activity, with a minimum of supervision by the staff and a maximum of responsibility upon the student, will give opportunity for all seven groups to participate. The important idea behind the organization of both classroom and extra-curricular activity is to make each individual student feel that he is important as an individual to the geography department. He should be given every encouragement to feel that geography, rather than taking time from his chosen field, really enhances and strengthens it.

An added dividend of this program is the interest and friendliness which the activity program promotes in other departments. The social studies department was interested in the student-planned trip to the United Nations in New York. One member of that department helped in a pre-trip orientation session. Another member of the same department met in a student-organized seminar discussing the pros and cons of Turner's frontier thesis. The audio-visual department has placed a projector in one of the geography rooms—a unique privilege. The science department cooperates in conservation and geology field trips. As a result of the con-

geniality of feeling, the students have expressed the feeling that the school, as a unit, is looking after his best interest, and that he is not the center of a tug-of-war between antagonistic departments.

Summary

Since we must deal with seven or more widely differing interests of students at once, recognition should be given to the fact that geography is such a versatile subject that it can serve each of the seven interests and yet suffer no loss of its identity as geography. By using the music major's desire to learn of the music of other lands or the English major's interest in the physical settings of the classics, we can help these and others broaden their perspective. The facts of science which are required to understand the necessary "fundamentals" become not a bit of geographic drudgery but an integral part of each student's chosen field. With enthusiastic and thoughtful instruction in the classroom and with careful organization of extra-curricular activities, we should find geography accepted willingly and with profit by students of all curricula.

THE LEGEND OF TIMBUKTU*

Benjamin E. Thomas
University of California, Los Angeles

Few towns of equal size have captured the imagination and endured in geographical folklore as Timbuktu[1] has. The name has lasted for centuries as a symbol of remoteness and of African trade. One connotation of the word—a place that is remote, that is rarely visited by Europeans or Americans, and that is difficult to reach—is a useful and valid one. It is correct and colorful to use an expression like "from New York to Timbuktu."

* The author is grateful to the Office of Naval Research and to the University of California for research grants which made field work on changing trade routes of northern Africa possible. This article is a revision of a paper presented at the annual meeting of the Association of American Geographers, April 14, 1955, at Memphis, Tennessee.

[1] Three spellings are in widespread usage in English. "Timbuctoo" is the oldest standard spelling in English and almost all books on the town, whether published in Britain or America, use this form. The German word "Timbuktu," however, has been brought into the English language and is now more commonly used on American maps and in articles than "Timbuctoo." To those geographers who prefer to use official local spellings, the French word "Tombouctou" is considered the correct form.

However, there is also an invalid or at least very misleading connotation of the word—a brilliant city and regional capital at the focus of important routes. At one time there was an element of truth in this concept, but from the first the popular impression has been based more upon false information and exaggeration than upon geographical fact. Also, since the time the first European explorers reached Timbuktu, geographers have tried in vain to cut the popular concept down to the size of the town itself, and to relegate the center to its proper place with respect to the other towns of West Africa.

So great is the magic in the name "Timbuktu," however, that ordinarily reliable reference works repeat the errors of the past and ascribe an importance to the center which it never had, or which it has lost. Two examples, among many, should suffice. *Webster's Geographical Dictionary,* 1949, states that Timbuktu is an "important trade center on motor transport route across Sahara," and the *Columbia Lippincott Gazeteer of the World,* 1952, describes Timbuktu as a "center of caravan trade on trans-Saharan road to Algeria and Morocco."

Actually, it should be noted that: (1) The Timbuktu of the twentieth century is commercially only a secondary seasonal river port and a minor trade center for salt, local produce, etc. Dozens of towns in West Africa are larger and of more consequence. (2) Timbuktu is not now a center for trans-Saharan trade of any kind. (3) The trans-Saharan camel caravans disappeared some time ago, and (4) Timbuktu is not on a motor route that crosses the Sahara. In fact, it is one of the more difficult centers in the Sahara-Sudan region to reach by motor transport.

The local site and general situation of Timbuktu, together with the changing values ascribed to them by different periods of historical geography, go far toward explaining the rise and fall of the center.

At the southern margin of the Sahara, the Niger River swings northward and then southward to flow to the Gulf of Guinea (Fig. 1). The bend of the Niger is therefore the northernmost area that is accessible to water transport. Because of swampy land, fluctuating levels of the river, shifting channels, and other factors, only a few areas along the bend of the river form suitable landing places. Timbuktu was established at a favorable spot and by about 1000 A.D. was a seasonal camp and local market. Traders settled at

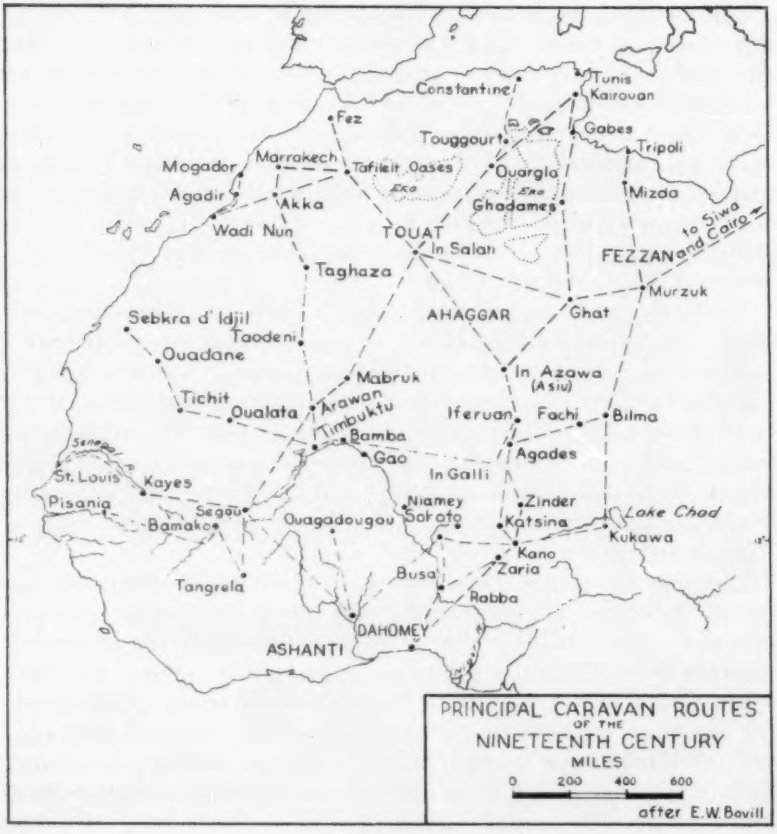


Fig. 1

Timbuktu and it became a collecting point for Sudanese products like gold, slaves, and leather, which were sent to Morocco by camel caravan with a return flow of manufactured goods. Other routes led to Tunis and Tripoli. Timbuktu was the meeting place of the camel and the canoe—the port of the Sudan in the Sahara.

Timbuktu was at the meeting place of several languages and cultures—Sudanese groups such as the Songhai and Fulani on the south, Tuaregs to the northeast, and Mauritanians to the northwest. The resulting mixing was sometimes a cultural advantage during the periods when these civilizations were at a high level, but there were also political disadvantages. Timbuktu was often

stormed. It changed hands many times with the rise and fall of Sudanese empires. However, the commercial advantage of its location seems to have sustained the town for several centuries. It became a noted center of Moslem learning. At its height in the 15th century, it may have had 20,000 inhabitants. The cultural decline of Timbuktu probably started with its conquest by a Moroccan army in 1591. An actual decline in population and trade seems to have occurred during the 17th century. There were always other trade centers in West Africa; sometimes several of these were larger than Timbuktu.

The reputation of Timbuktu in Europe, however, far surpassed the brilliance of the town itself. The actual location of the place was in doubt, but the tales carried to Morocco pictured Timbuktu as a great Sudanese metropolis with grand buildings and fabulous wealth. Many European explorers failed in their attempts to reach it. The explorer, Mungo Park, traveled down the Niger in 1805, but he was prevented by hostile Tuaregs from landing and visiting the town. He met his death at the Busa rapids several hundred miles farther down stream.

Finally, Major Gordon Laing, an Englishman, crossed the desert from Tripoli and reached Timbuktu in 1826. But he was forced to leave and was murdered by his escort. His account of the city never reached Europe.

A year later, however, the Frenchman René Caillié made his way to Timbuktu from the west coast and then crossed the Sahara to Morocco. His journal clearly records that he was surprised and disappointed at finding only a mud village instead of a great city.

> "I had formed a totally different idea of the grandeur and wealth of Timbuktu. The city presented, at first view, nothing but a mass of ill-looking houses, built of earth."[2]

However, only a certain group of geographers and others absorbed this intelligence. The legend of Timbuktu lived on in popular writing. Even the more complete reports of the German geographer, Henry Barth, who visited Timbuktu in 1853-54, did not dispel the popular impression that Timbuktu was a grand Sudanese emporium.

Some of the elements in the decline of Timbuktu from one of the leading towns in interior Africa to a secondary level were the exhaustion of gold in the Sudan, suppression of the slave trade,

[2] René Caillié, *Travels Through Central Africa to Timbuctoo*, London, 1830. Vol. 2. p. 49.

and the opening of routes from the Niger to the west coast with the associated abandonment of trans-Saharan camel caravans.

Since the conquest by France during the latter part of the Nineteenth Century, the outlet for the Timbuktu area has been by way of the Niger River and the west coast. First, a trail connected Bamako on the Niger River with the Senegal River, providing an outlet to St. Louis. A rail line later replaced the trail, and then a railway was completed for the full distance from Bamako to Dakar, a better port than St. Louis. A motor road parallels the railway.

With the decline of both the camel and the canoe, one would expect that the local site and general situation of Timbuktu would lose their former values. On the Niger, river boats have partly displaced the canoe. They ply the navigable segment between Bamako and Gao, which have better landings than the intermediate port of Timbuktu. In North Africa, Algeria was the first country to develop motor trails into the Sahara. Some of the early expeditions did visit Timbuktu, but no trans-Saharan roads were built to it. From the first, the trans-Saharan routes naturally avoided the barren and sandy regions north of Timbuktu (as well as the village itself) and led to more important centers that were several hundred miles to the east of Timbuktu. (See Fig. 2) A later but less traveled route runs from Morocco to Dakar. The road pattern clearly shows that Timbuktu, instead of being a hub of roads, is off the main routes.

Present day descriptions of Timbuktu sometimes mention trans-Saharan camel caravans that lead from it to Morocco, Algeria, Tunisia, and Tripoli. This is obsolete information that has survived from past centuries. The camel is still used for nomadic wandering and for desert trade, of course, but there are no trans-Saharan caravans of the ancient type depicted in Fig. 1. The hauling of salt from the desert mines to the borders of the desert and the transporting of grain and firewood to market are typical examples of present camel transport. Figure 3 shows the major routes of camel caravans of the Mid-Twentieth Century.

Timbuktu is a center for the distribution of salt brought by camel caravans from the mines to the north, but trade with the outside world is by way of the river to Bamako and then the railway to Dakar. Timbuktu is a village in the trade area of Bamako, which in turn is part of the hinterland of Dakar.

At Timbuktu and to the southwest, the Niger Valley is broad and swampy with several channels. (Fig. 4) Timbuktu can be

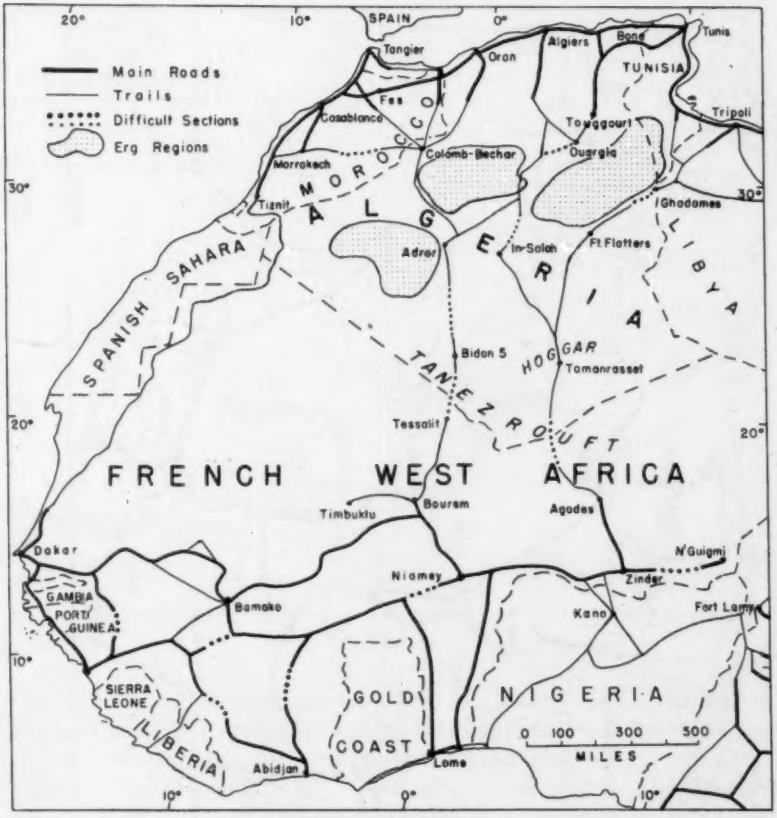


FIG. 2. West African Roads—1952

reached by dugout canoes during high water. When trans-Saharan camel caravans operated, the center was at a strategic spot—on the river and as far to the west toward Mauritania and Morocco as one could go without entering the swampy inland delta area.

Today, however, Timbuktu is a far less satisfactory port than Bamako to the west, or Gao to the east. Modern river boats can only reach Kabara landing, about five miles from Timbuktu, during high water. Trucks and donkeys carry goods to Timbuktu from the river.

Timbuktu has not a single hotel, restaurant, or modern type store. In 1954, when the writer visited the town, there were only three commercial motor vehicles for the population of 6,000. On

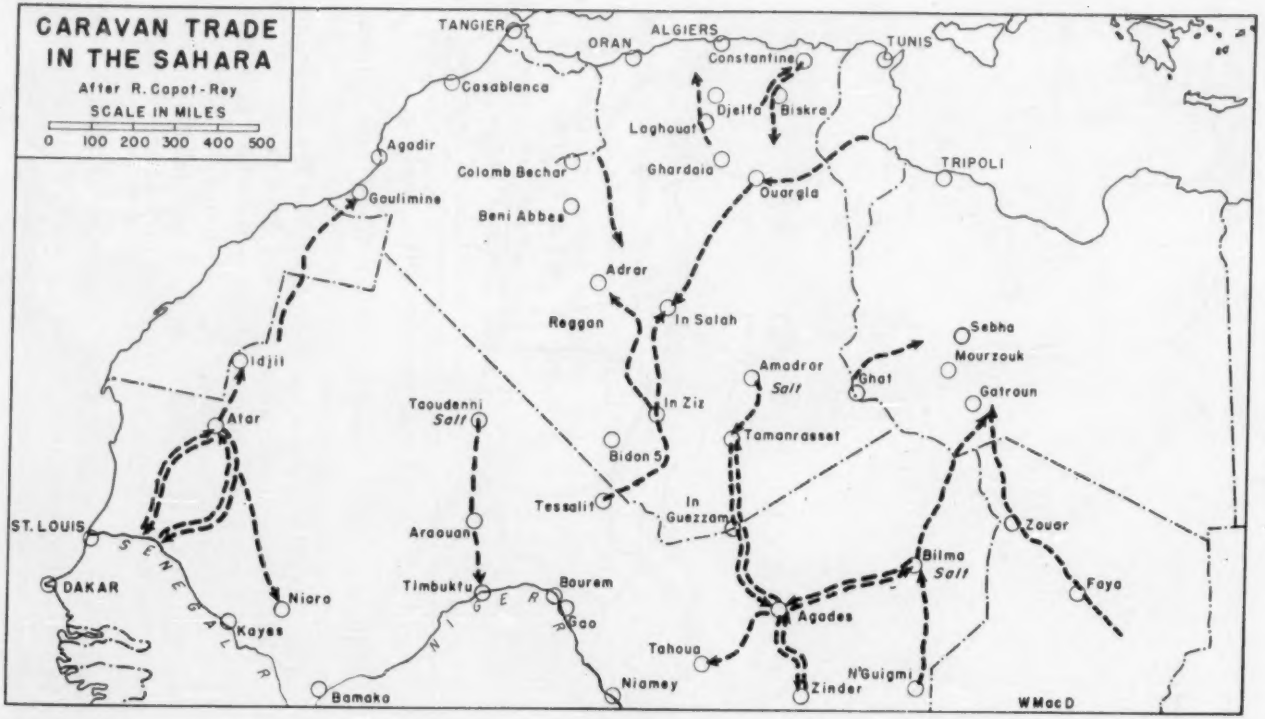

CARAVAN TRADE
IN THE SAHARA
After R. Capot-Rey
SCALE IN MILES
0 100 200 300 400 500
TANGIER
ORAN
ALGIERS
TUNIS
Constantine
Casablanca
Djelfa
Biskra
Laghouat
Agadir
Colomb Bechar
Ghardaia
TRIPOLI
Ouargla
Goulimine
Beni Abbes
Adrar
In Salah
Reggan
Sebha
Mourzouk
Idjil
Amadror
Salt
Ghat
Gatroun
Taoudenni
Salt
Atar
In Ziz
Tamanrasset
Bidon 5
Tessalit
In
Guezzam
ST. LOUIS
Araouan
Zouar
Bilma
Salt
DAKAR
Timbuktu
Bourem
Faya
Niora
Kayes
Gao
Agades
Tahoua
N'Guigmi
Niamey
Zinder
Bamako
WMacD

FIG. 3

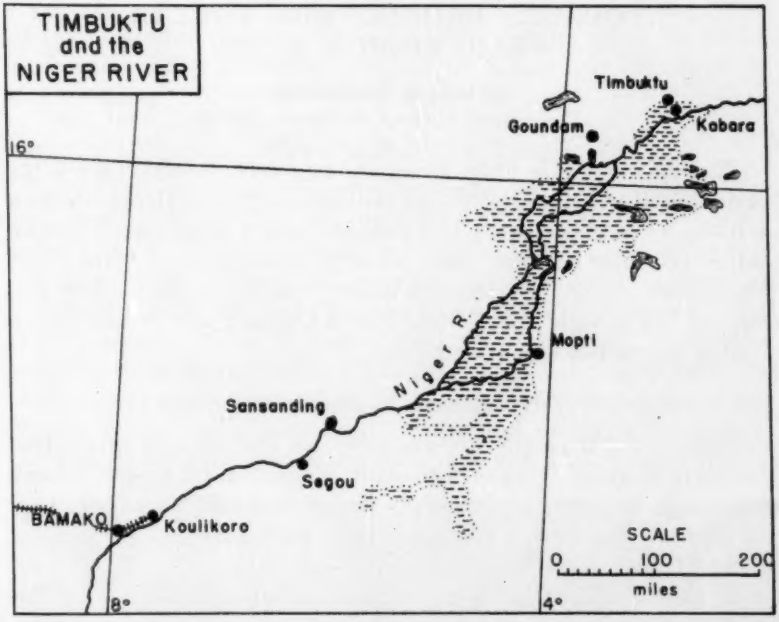


FIG. 4

the other hand, Bamako is ten times as large, with a number of modern hotels, restaurants and department stores. Bamako is also a center of rail, motor, air, and river transportation for a large region. The port of Dakar, of course, is even larger—the greatest city in West Africa with a metropolitan population of over 200,000. Many maps of Africa emphasize Timbuktu, while neglecting larger centers. Timbuktu is a place of some importance historically, but that cannot justify showing it in large type on a modern map of West Africa while indicating Bamako and Dakar in smaller letters, or even omitting them. That is equivalent to showing Jamestown and Williamsburg, Virginia, as important places while Richmond and Norfolk are omitted.

The overemphasis of Timbuktu on maps, and the persistence of a belief that it is the greatest city of interior West Africa with caravans to the north coast, in spite of the writings of explorers and geographers, are excellent examples of the difficulty of substituting geographical reality for geographical folklore.

TOBACCO PRODUCTION: VUELTA ABAJO REGION, CUBA

LUELLA N. DAMBAUGH
University of Miami, Coral Gables, Florida

Native Indians in Cuba produced and used tobacco before the arrival of the Spaniards. Today the emphasis is on the production and export of high quality leaf tobacco, only a small part of which enters the international trade lanes in manufactured form. That which does, seeks the exclusive luxury market which prefers and can pay for a high priced, hand-rolled Cuban cigar rather than a United States machine-rolled cigar.

TOBACCO—A BIG DOLLAR EARNER IN WESTERN CUBA

Some 200,000 people are employed in the various productive phases of tobacco, from seed to cigar. Exports total around 40 million pesos, 75 percent of which is leaf tobacco. Thus, tobacco is a significant dollar earner for the Cubans, especially in those regions where it constitutes the major use of land.

Of the 80 million net pounds of leaf tobacco produced in Cuba in 1954-55 (July to June) over half of it originated in the Vuelta Abajo Zone in Western Cuba, four-fifths of which was supplied by the subzones around Pinar del Río, San Juan y Martinez, and Viñales.

The Vuelta Abajo subregion extends some 50 kilometers from east to west and 15 kilometers from north to south, including the beautiful and much publicized Viñales valley, with the town of Pinar del Río as the hub. It is in this area that the environment is able to produce certain distinctive leaf characteristics, for not only are the leaves very wide and of fine texture and elasticity, but have a delicate odor and low nicotine content. Here also, are to be found sandy loams with friable and well-drained subsoils. When these soils are carefully prepared, fertilized, and irrigated, they give excellent harvests year after year. The mean annual rainfall is around 60 inches, seasonally distributed, with May to October the rainy season when the northeast winds are prevailing, and November to April the dry season with a southeast wind direction.

Not only is the Vuelta Abajo region the leading tobacco producing region in Cuba, but it is unrivalled in the quality of its leaf.

Hence, the very highest quality cigars in the world are the product of the geographic conditions in this area. Almost all of the leaf is utilized in making *torcidas* (cigars) in Cuba, and the small remainder is sold in United States market.

PATTERN OF PRODUCTION ON A TOBACCO VEGA

Seed beds are prepared and planting begins about September 19, and then at fifteen-day intervals thereafter (Fig. 1). Seedlings grow rapidly reaching 10 to 12 inches in 35 to 40 days. Transplanting goes on during the latter part of October and the first part of November in the parts of the *vega* (tobacco *finca*) already covered with cheesecloth (Fig. 2) to protect the tender plants from the hot sun and the attack of insects. Thus, the period of growth coincides with lower monthly temperatures and the dry season. These conditions further help to account for the high quality of the leaf.

The plants are given meticulous care and attention during the

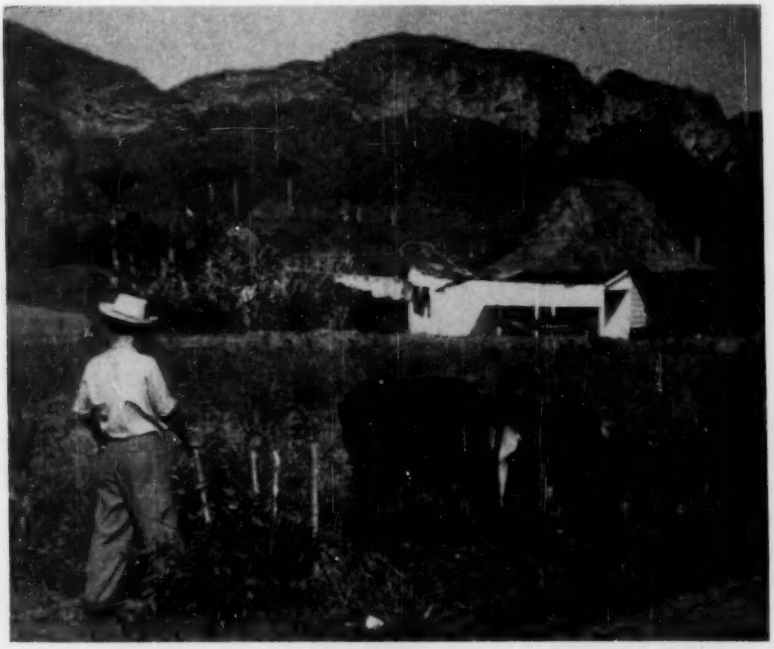


FIG. 1. Returning home from cultivating tobacco fields, Viñales valley.

next three months; weeds and insects must be eliminated. Sometimes this work continues during the nighttime hours.

When picking begins, the lowest leaves, those of the poorest quality, are picked first. Next, the highest quality leaves which make the best wrapper—the five or six middle leaves on the stem, or *centros*, are picked. Finally, the workers pick the topmost leaves, or *coronas*, that produce a dark wrapper. The leaves are stripped

Fig. 2. Tobacco grown under cheesecloth, Vuelta Abajo region, Western Cuba. Photo by La Comision Nacional de Propaganda y Defensa del Tabaco, Habana, Cuba.

on lath and hung in tiers in a *casa de curar* (drying shed), which is a sizeable two-story barnlike structure with overlapping wooden lath on the sides and a roof of thick thatch. Inside, temperatures

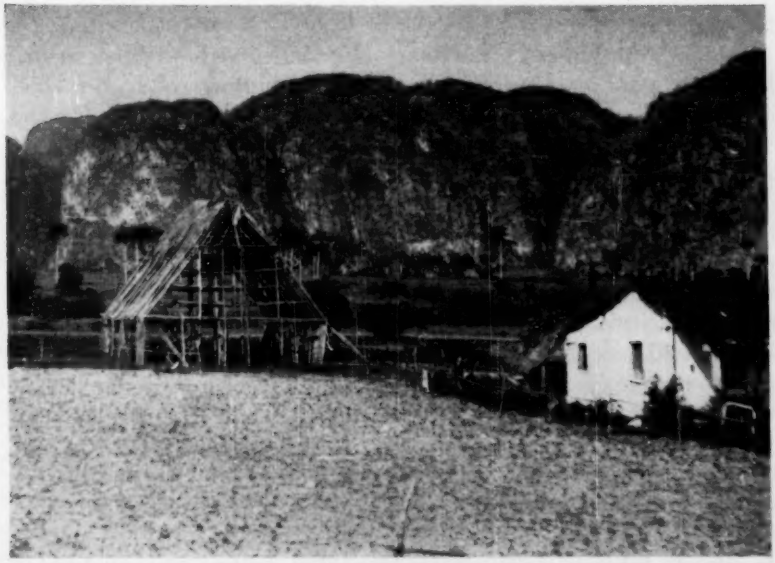


FIG. 3. Construction of a *casa de curar* (curing barn).

are high and rigidly controlled, necessitating hourly inspections of each barn, both day and night to insure a uniform product. Each barn when filled is valued at 20,000 pesos, according to the current price of 1.07 pesos per pound in 1955 (Fig. 3).

RÍO SECO TABACO VEGA—A TYPICAL LANDSCAPE

To look out over a typical *vega* from some high vantage point, as I did in December 1954, one is impressed with the gently rolling terrain and certainly the ease with which the soils can be worked. Around the administrative units and the large house of the Río Seco Tabaco Vegas belonging to the Tabacalera Cubana, S.A., a short distance from Pinar del Río, the plots under cheesecloth outnumbered the fields in the open sun, and come right up to the very edges of the curing barns and worker's huts. In fact, looking down upon this panorama one got the erroneous impression that the thatched roofs of the curing barns grew up thru the cheesecloth. There is no particular pattern of arrangement of the curing barns, and certainly very little, if any, adequate fire protection.

Catastrophic Fire Damages Río Seco Tabaco Vega

During the lunch hour a phone call summoned our host—a fire had broken out in an empty barn across the highway. We all rushed out to see for ourselves. Strong winds caused the fire to jump the highway, then dance along the cheesecloth, widening in a V-shaped path as it spread, wiping out one curing barn after another. The workers, bewildered at first, hastened to tear down the cheesecloth in advance of the fire, but soon the lee side of the thatched roof of another curing barn would be smoking and within minutes the red, hot flames had devoured the thatched roof and in no more than twelve to fifteen minutes the barn would be completely consumed—the last flame shot high into the air with a hissing sound, for the butane gas tank (used for heating purposes) was the last to be destroyed.

The host estimated that the total damage was around one million pesos, which included 15 or 16 curing barns filled with tobacco, several empty barns, 27 or more homes of the workers (a whole village beyond the limits of Cubanaland's property), and untold damage to tobacco stalks. Many plots that we had inspected prior to the lunch hour had their valuable *centros* and *coronas* yet to be picked. Now, these tall, lush stalks lay wilted on the ground.

The geographic implications of the dry season, resulting in a low water table, prevented effective control of the fire. There was only a trickle of water in the pipelines running thru the fields. Everything was as dry as tinder. And, the winds were moderate to fresh in miles per hour. This was the first major catastrophe in the history of this region. Perhaps, better planning of the sites of the curing barns in relation to the plots under cheesecloth and the workers' homes will ensue; perhaps also, installation of effective fire control measures will follow. The most lasting impressions of this area, however, are the beauty of its landscape and the prosperity that is based largely on high quality tobacco.

THE ST. LAWRENCE SEAWAY—ITS DEVELOPMENT AND ECONOMIC SIGNIFICANCE

KENTON W. MORRIS
Kirtland Air Force Base, Albuquerque, New Mexico

On the border between two of the greatest nations of the world, a dream is coming true. This dream, which is nearly as old as the United States, was put aside for many, many years while the two nations grew from very humble beginnings to great world powers. Since these nations were so long absorbed with the more important tasks of pushing back the frontier and establishing national solidarity, this dream was momentarily put aside. Now, after many years of waiting "on the shelf," the St. Lawrence Seaway is at last becoming a reality.

Because of the tremendous effect this project will have on the United States and Canada, and because of its far reaching effects in partically all parts of the world, it is well that we should summarily review the development of the seaway and some of the outstanding aspects of its economic significance.

DEVELOPMENT

Table 1

Chronology of Some of the More Important Historical Events

1783	Canal completed between Montreal and Lake St. Francis.
1832	Welland canal opened at 7 feet.
1834	Engineering report recommended that Canada initiate canalization of waterway in Canada.
1854	Reciprocity agreement in treaty form confirmed and guaranteed *free* navigation of St. Lawrence waterway to Great Lakes.
1887	Welland canal deepened to 14 feet.
1896	International waterway commission created.
1901	Williamsburg canals deepened to 14 feet.
1901	Hydro-electric plant completed at Massena, N.Y. with a capacity for 7,500 horsepower. This plant now generates 90,000 horsepower.
1903	All St. Lawrence canals had been deepened to 14 feet.
1927	United States Department of Commerce recommended 27 foot channel.
1931	New York State Legislature authorized full development of the International Rapids for power.
1932	Welland canal opened at 30 feet over the sills.
1940	President Roosevelt urged Congress to act on construction of International Rapids section, with national defense being a prime consideration.
1949	After consistent refusal of United States Congress to approve project, Canada indicates it may go it alone.
1954	Congress passed seaway bill.

One-hundred and seventy-one years elapsed from the time the first work was completed until the United States Congress finally passed a bill which will make the Great Lakes our fourth seacoast. An examination of the reasons for this long delay is necessary if we are to have a complete understanding of the project.

During the period of greatest growth and expansion of this country, our frontier was, for the most part, land-bound. The methods of transportation needed to move farmers and settlers

into the western parts of the country was, therefore, land transportation. Because necessity is the mother of invention, we developed what we needed and relieved the impatient surge of a land hungry people with railroads, roads, and where practical, river traffic.

It was in part thru utilizing these modes of transportation that the West was made into a solid segment of this country. Until the West was settled, there was little interest in any expensive project to give us a fourth seacoast when our third one, on the Pacific, had been but slightly developed.

After the turn of this century it became apparent, to all who cared to face reality, that the St. Lawrence River and the Great Lakes were important keys to the industrial hearts of both this country and Canada. Every President from Wilson to Eisenhower favored the seaway. However, lobbies by the railroads (lobbies

grown powerful by this time) and industrial interests in the east coast ports were successful in blocking such legislation. It was not until after the midwest showed impatience with Congress, and after Canada threatened to go it alone if we continued stalling, that a favorable bill finally passed Congress.

The seaway, from the mouth of the St. Lawrence River to Detroit, is scheduled to be completed by 1959. The remainder of the system, to include Lake Superior and Lake Michigan, will probably be completed before 1962.

When completed, the seaway will provide a passage for ocean going ships that can make calls at ports such as Chicago, Duluth, Detroit and Buffalo. A 27-foot channel will be provided from the Atlantic to the western tip of Lake Superior.

The cost of this mammoth undertaking is about $5 billion. The terms of the agreement between the United States and Canada stipulate that Canada will pay slightly more than one-half and the United States will pay the remainder. Altho this cost is great, it is insignificant when compared to the tens of billions of dollars in trade that will be generated within a few decades after completion.

ECONOMIC SIGNIFICANCE

Shipping. All channels thru the seaway will be at least 27 feet deep, and all locks will be at least 768 feet long, 80 feet wide and 30 feet deep (over the sills). Therefore, a ship of slightly less dimensions than the above measurements will be able to use the facilities. This will normally permit vessels of up to 20,000 tons to negotiate the passage. It has been estimated that seventy-five percent of the world's ships (all but the largest ocean liners) will be able to sail to the heart of the North American continent.

The seaway will be a free waterway open to ships of all countries alike. The only charge for its use will be in the form of tolls to help defray operating costs. The seaway is expected to carry 45 million tons of cargo each year. That is roughly the same amount the Panama canal carried in a recent year.

Why will such great quantities of cargo be shipped up and down the St. Lawrence? It is mainly because of favorable freight rates. Water transportation has invariably been cheaper than rail or highway transportation, and the new seaway, in spite of its high construction costs, is no exception. For example, according to *Time,* June 6, 1955, goods that are now shipped by rail from the

Great Lakes area to the east coast for $13.00 a ton, can go down the seaway for $1.70 a ton.

There is, however, one serious drawback to the St. Lawrence as a waterway. It is blocked by ice for about five months each year. This is a disadvantage that can never be completely overcome, but its effects can be largely negated by seasonal shipping and stockpiling during the winter months.

Trade. Canada will reap the greatest benefits from the seaway. The United States has three good coasts which makes its international trade the foremost in the world. Canada, on the other hand, has three coasts that are all but unusable. The Arctic is ice blocked; the Pacific has a mountain barrier; the Atlantic is far removed from Canada's industrial centers and it is also buffeted by severe weather. The St. Lawrence Seaway, therefore, will assume the role of Canada's only hope for an adequate, usable coast. This is the main reason behind its desire to complete this project.

The new "seacoast" will be 8,000 miles long and will reach into the industrial heart of Canada. The advantages to be gained by its industries will be sweeping. Raw materials may be imported and unloaded nearer the site of manufacture. Finished products can be shipped directly to foreign markets without the necessity for long, expensive rail shipments to Montreal or Quebec. This, of course, will permit these products to compete on world markets at lower prices. Canada's agricultural products from the prairie provinces will likewise compete for world markets more advantageously than now because of lower shipping costs.

The effects the seaway will have on United States trade will be much like the effects on Canadian trade. In addition to the cheaper transportation that can be offered agricultural products and the possibilities it will offer industry in the area, other changes and effects will obviously come about. For example, Chicago will become a major world port; Cleveland, Detroit, Buffalo, Rochester, Milwaukee, Toledo, Superior and Duluth will experience increased trade and growth.

All these cities are making plans and some have already started work on improving their port facilities. To get a better idea of just what is involved to get one of these cities ready for the increase in trade that is to come, here is a closer look at one of them, Toledo.

According to *U. S. News and World Report*, 1 June 1956, this city is counting on a big increase in cargo of all kinds. Altho Chi-

cago will probably get most of the grain export trade, Toledo hopes that a considerable portion of this trade will pass thru its port. From the present 34,000 tons of foreign cargo handled in a year, it is estimated that this volume will swell to two and a half million tons by 1980.

Toledo, at present, has only one dock that foreign ships can use, but it has plenty room to build more. A city port authority has been organized and has been authorized to issue up to $20 million in bonds to finance the necessary construction.

The seaway will be completed about the same time the Mesabi range runs out of high grade iron ore. Ore from some of the Canadian and South American deposits can be shipped up the St. Lawrence to the iron and steel industries using the same facilities that are now handling the Mesabi ore.

There has been concern expressed for the future of the east coast ports. Some fear the seaway will adversely affect these ports by taking away trade. This appears unlikely to become serious, for the gross national product of the United States doubled between 1925 and 1950. It is expected to double again by 1975. The seaway will, of course, play an important part in this economic growth; however, it cannot possibly account for more than a rather small percentage. East coast ports can look forward to an almost undiminished role in this national growth and expect a period of greatly augmented prosperity. The same reasoning can be applied to the future of the railroads in the area. The expanding economy will minimize the adverse effects.

The possibility of the petro-chemical industry moving into the inland ports on the Great Lakes appears good. It is a natural import area for foreign petroleum which can be off-loaded in its crude state and refined in the area where it will be used. Here again, transportation costs are the most significant economic consideration.

Hydro-electric Power. The locks and dams being constructed will not be built for navigation alone; there will be incorporated in the project very large hydro-power facilities. When the seaway is completed its power plants located between Montreal and Lake Ontario alone will generate 12.6 billion k.w.h. each year. This output, which is three times the output of Hoover Dam, will be shared by the two countries. The United States will sell its share to private utility companies who will transmit it to the New England and New York areas.

MILITARY SIGNIFICANCE

Perhaps the most important military factor will be the possibility for better dispersal of industry, making this core area less vulnerable to air attack. However, the submarine is still a threat to shipping, and the further a port is removed from this menace, the safer is the ship approaching and departing crowded harbor facilities. This threat to the Great Lakes area could be easily nullified at the mouth of the St. Lawrence River, since the width of the approaches is narrow enough to be patrolled with little difficulty.

EFFECT ON THE FUTURE

The populations of the United States and Canada are increasing rapidly. Some authorities have estimated that the United States will reach the 200 million mark about 1970, and that Canada may approach 21 million by the same date. With increasing populations and technical achievements that increase per capita productivity each year still multiplying, one can expect a rapid growth in American and Canadian industry.

The development of an industrial complex is particularly dependent on these factors: (1) a large, highly skilled population, (2) access to raw materials, (3) adequate sources of power, (4) a satisfactory transportation system, (5) food that can be produced in the immediate area or economically shipped in, (6) a market, and (7) an adequate supply of water. The area around the Great Lakes has all of these. Nevertheless, the seaway will provide a more complete integration of these salient factors. All of this makes the Great Lakes area a natural for rapid industrial growth.

Since the areas surrounding the Great Lakes are very well suited for industrial expansion, they would inevitably have grown had the seaway project never been approved. Now, with the whole world opened as an easily accessible market and direct trading center that can be reached by cheap water transportation, this growth will be accelerated and will reach greater proportions. As these areas expand and prosper, the effects will not only be felt in the industrial Midwest but also thruout the entire nation. It may be safe in carrying this further by postulating that the effects will be felt thruout the world, for nations thruout the world will be coming to trade on the St. Lawrence Seaway.

DICTIONARY OF

ANTHROPOLOGY

by CHARLES WINICK

Prepared with the cooperation of a group of distinguished anthropologists

Anthropologists in the course of their research are called upon to invent special terms. Many of these terms cannot be defined with absolute precision and are used on the basis of a tacit consensus about their meanings. This agreement depends on a shared notion of the connotations of a particular term rather than on a clear verdict of the words' denotation.

Many anthropological terms carry the burden of their past history into present discourse. Kroeber and Kluckhohn have written a fascinating and sizable monograph on the many shades of meaning which cluster around so basic an anthropological concept as "culture." In other cases, the meaning of a concept is affected by the distinctive circumstances of a classic investigation or the special use to which the concept was put by a particular investigator, or it is overlaid with the remains of past polemics.

Although no attempt has been made to cover every isolated use of a term, the selection of entries has been keyed to standard source and instructional materials in anthropology. To assist the reader into the more remote reaches of the literature, short biographical identifications of some of the leading earlier contributors to anthropology are included. $10.00

PHILOSOPHICAL LIBRARY

Publishers

15 East 40th St., Dept. 484, New York 16, N.Y.

Expedite shipment by prepayment

THE RESEARCH FUND

A Research Fund for work in geographic education is available thru the National Council of Geography Teachers. Are members aware of this? Use of these funds may be an incentive for some members to write an article concerned with the teaching of geography. Members of organizations are disturbed when their funds lie idle. When no money is requested none is used. Here's hoping that interested persons will help get the money in the Research Fund into circulation. Address Anne M. Goebel, State Teachers College, Emporia, Kansas.

Louis de Rochemont
presents

SUEZ CANAL

(Story behind Today's Headlines)

RENTAL:
16mm. Black & White 18 Min. ..... $ 6.00
16mm. Color 18 Min. 10.00

SALE:
Color: $100.00 Black & White: $60.00

Send for Free Teaching Guide and Complete Catalog

Louis de Rochemont Assoc.
Film Library Dept. JG
13 East 37th St., N. Y. 16, N.Y. MUrray Hill 4-0204

THE NATIONAL COUNCIL AT WORK

New Fellows. Any member in good standing for the last five consecutive years is designated as a Fellow of the National Council of Geography Teachers. John W. Morris, Secretary of the NCGT, reports that the following persons have become Fellows in 1956:

Barbara K. Archer
Robert A. Atkin
Virginia Barrack
Jessie Beaton
Lawrence D. Bergman
Edward L. Biller
Ferd F. Black
Neal M. Bowers
Gussie N. Braithwaite
Paul J. Brand
Gerald F. Brommer
Robert H. Brown
Delmas A. Bugelli
Fred A. Carlson
Champ C. Carney
Ethel S. Cheek
Martha E. Church
Charles Clark
Genevieve Clark
Major H. Lee Combs, Jr.
Daniel R. Davis
George Davis
Robert A. Emmet
Rose Freifield
Mrs. Wallace Fristoe
Mrs. Gordon Gatewood
Amoz E. Gibson
David Greenhood
A. S. Grundy
Orvin W. Hahn
Kenneth F. Haydon
Harry S. Heimomen
George F. Herrick
A. Holden Higbee
V. G. Higginbotham
Leonard M. Hunting
Minnie P. Kelley
George C. Kimber
George A. Knadler
Leonard I. Kuntz
Charles F. Lane
Mary L. Lawrence
Lois Lloyd
Margaret Lux
Thomas E. Madigan
Maria Martinez
Harold H. McCarty
Jarrell I. McCollum
George L. McDermott
Roy W. McNeal
M. B. Messamer
Paul T. Miller
Mary Elizabeth Moses
Mother Chrysostom, O.P.
Catherine Mowrer
Leroy O. Myers
Herman L. Nelson
Robert M. Newcomb
Mrs. Vincent J. Oliver
Loraine Orme
Ethel Packer
Ruben L. Parson
Raymond A. Peterson
George Porter
Etta F. Prouty
Neville V. Scarfe
Ralph Shaffer
Sister Evangelista
Sister M. Carol
Sister M. Hermana
Sister Marion, S.C.H.
Sister Mary Consuela, I.H.M.
L. E. Snyder
John A. Sobol
Luella Specht
J. C. Steele
Maude M. Sweney
Amanda Thiele
Robert Trail
H. F. Truxton
Eugenia W. Tuttle
Jack Richard Villmow
Edith West
Jesse H. Wheeler, Jr.
Gilbert F. White
A. Joseph Wraight
Robert N. Young
Herbert Zobel

Contributing Members: The Contributory Memberships provide the funds for financing the publication of completed projects and committee research studies set up by the National Council. The annual contribution of each Contributing Member is ten dollars or more and this includes subscription to the *Journal of Geography*. Following is the list of Contributing Members for 1956:

Mamie Anderzhon
Wallace W. Atwood, Jr.
Thomas F. Barton
Hermine K. Bauschard
William J. Berry
Viola M. Bohn
Irma A. Buell
Norman Carls
Berenice Casper
Mrs. Charles C. Colby
George B. Cressey
Florence Cullin
Floyd F. Cunningham
Mrs. Rosiland G. Dragon
Elizabeth Eiselen
Annice D. Elkins
Adah Flemington
John H. Garland
Herbert H. Gross
Gilbert Grosvenor
Donald R. Hammonds
Frances M. Hanson
Charles B. Hitchcock
Preston James

(Continued on page 456)

Members...

Are you doing your part to get rid of those old, tattered, out of date, books, maps and other equipment? Are the school funds being spent for worth-while materials for the children or are they being wasted?

These pages direct your attention to a large body of fine material for the use of both student and teacher. Write our advertisers, collect needed information, and start the "ball rolling" so as to replace that ancient equipment; much of which is already a disgrace to any American school.

You can help a great deal. Just try it.

A REQUEST

Give your support to our advertisers. Those who sell things that are worth having speak to you thru these pages. They give their support to us. You can reciprocate—

1. By writing them—ascertain just what you want and see that it is secured for you
2. By commending their product
3. By buying their product. Buy from those who use the JOURNAL to announce their product
4. By acquainting prospective and active teachers, school administrators and school boards with the products advertised in the JOURNAL.

Our advertisers have high grade products and want to serve you. Cooperate by giving them a chance. Do it now! Results are what count!

COWARD-McCANN

Good Books
for Boys and Girls

FALL 1956

"A new series, *Challenge Books*, should prove both popular and valuable to school and home libraries.
The subject of the series is the effect of geography on people and the modifications people have made upon geographical features."

—Denver Post

COBRAS, COWS AND COURAGE
Farm Life in North India

By JEAN BOTHWELL. A study of age-old custom and new farming techniques.

HIGHWAY TO ADVENTURE
The River Rhone of France

By PATRICIA LAUBER. How a major river influences the development of a region, transporting goods, people, civilization.

BATTLE AGAINST THE SEA
How the Dutch Made Holland

By PATRICIA LAUBER. How the Dutch have doubled the size of their country by building dikes.

PEOPLE OF THE SNOW
Eskimos of Arctic Canada

By WANDA TOLBOOM. How the Eskimos have found food, shelter, heat and clothing in a cold, barren land.

Each Challenge Book is well illustrated with photographs, maps and charts. Cloth, 96 pages. Ages 10-15. $1.95 each.

Send for free catalog

COWARD-McCANN

210 Madison Avenue, New York 16

(Continued from page 454)

George C. Kimber
G. David Koch
Cylde F. Kohn
Ben F. Lemert
Wallace R. McConnell
Mary McWenie
Joseph T. Maddox
Alice W. Magee
Alfred M. Meyer
Helen Mixter
Ruben L. Parson
Mary Viola Phillips
Paul Porochniak
James W. Prange
Ina C. Robertson
Earl B. Shaw
Cora Sletten
C. W. Sorensen
Cyril L. Stout
M. Melvina Svec
Zoe A. Thralls
A. G. Tillman
Eugene Van Clef
Katheryne Thomas Whittemore
Rose Zeller
Nora E. Zinc

Local Arrangements Committee. The success of our annual meeting in Atlantic City, New Jersey on November 23 and 24 was due in no small measure to the good work of the Local Arrangements Committee under the chairmanship of Helen Mixter. Members of this committee were:

General Chairman: Helen Mixter.

Publicity: Edward L. Biller, Jr. (Chairman), Frances Aldrich, Marvin Creamer, and Malcolm Davies.

Registration: Katherine Scott and Katherine Stritehoff (Co-Chairmen), John Augelli, George Beishlag, Donald Brandon, Norma League, and Bessie Rich.

Hospitality: Berenice Casper (Chairman), Jessie Turk, and William Van Royen.

Banquet and Luncheon: Evelyn C. Hightower and Marie Remmert.

Visual Aids: Edward L. Biller, Jr. and Malcolm Davies.

Field Trips: Adelbert K. Botts (Chairman), John E. Brush and Marvin Creamer.

NORMAN CARLS, *President*
National Council of Geography Teachers

GEOGRAPHICAL MATERIALS RECEIVED

Francis R. Preveden. **A History of the Croatian People.** Philosophical Library, New York, 1955. xvi and 134 pages with bibliography plus 64 pages of photographs. $7.50.

This Volume I covers the prehistory and early period until 1397 A.D. with some account of the Gothic, Roman, Greek, Illyrian, and Prehistoric Periods of the Ancient Illyricum and Pannonia.

World Missionary Social Studies Series of five filmstrips: **Missionary Adventure in New Guinea** (60 frames), **Missionary Adventure in Indonesia** (53 frames), **Missionary Adventure in the Philippine Islands** (58 frames), **Missionary Adventure in the Gold Coast** (58 frames) and **Missionary Adventure in Japan** (55 frames). Society for Visual Education, Chicago. Series $25.00, each filmstrip, $5.50.

Crescent and Green. Philosophical Library, New York, 1956. x and 170 pages with illustrations. $4.75.

This collection of sixteen contemporary essays on Pakistan's history and culture is drawn from English, American, Dutch, Italian and Pakistani contributors.

Leonard O. Packard, Bruce Overton and Ben D. Wood. **Geography of the World,** 3rd Ed. The Macmillan Co., New York, 1956. viii and 498 and xiv pages with photographs, maps, tables and index. $4.72.

It is the aim of the authors of this text to lead pupils at the junior high-high school level to see how necessary it is to become familiar with some of the geographic problems confronting our own nation and those of the world at large and to appreciate the place of influence and of responsibility which our country holds.

New 1956 Revised Edition

LARGE 72" x 64" SCHOOL MAP

D-G No. Sllrp

CANADA

Physical-Political

Edited by J. Lewis Robinson, Ph.D., University of British Columbia, author of "Geography of Canada," a text widely used in Canadian schools.

The tremendous importance of Canada in world affairs today, both from a military and a resource standpoint, has resulted in intensive surveys in that area. Consequently, the new edition of map Sllrp contains many features not shown on preceding editions of maps of Canada.

Map Sllrp (above) with contour-layer coloring to show land elevations and sea depths.

ADDITIONS: New railroads; new elevation figures; new contours; Kenny Dam and Reservoir; "Bluie West 8"; many additional cities; Mackenzie Highway; etc.

Write for further information

DENOYER-GEPPERT CO. 5235 Ravenswood Avenue Chicago 40, Illinois

Deal with those who deal with us—Write Our Advertisers

FUNDAMENTALS OF ECONOMIC GEOGRAPHY, 4th Edition

by NELS A. BENGSTON, University of Nebraska and WILLIAM VAN ROYEN, University of Maryland

Fourth Edition Highlights are:

1. Entire text has been carefully scrutinized and brought completely up-to-date including maps and graphs.
2. *New and improved material:* In addition to two additional chapters (one on Nuclear Energy Materials and the other on the relationship between climate, soils, and agricultural productivity) there are many new paragraphs and parts in each chapter. Chap. 31 originally on transportation has been completely rewritten.
3. *Research:* The experience of Prof. Van Royen in preparing two world atlases and his access to basic material rarely available benefits the new edition greatly.
4. *Improved Organization:* Book now opens with a discussion of the earth as the habitat of man followed by a chapter on population, and then the field and function of economic geography.
5. *Attractive Format:* We have retained the highly readable 7 x 9¾ format and have included dozens of new photographs, maps, charts, and graphs.
6. Book contains a completely new 8-page section of colored maps—one for each major continent (physical) and a political map of the world.

611 pages • 7″ x 9¾″ • Published 1956

CONSERVING AMERICAN RESOURCES

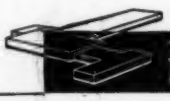
by RUBEN L. PARSON, East Tennessee State College

This is a highly *readable* book, written in clear, forceful language. A richly illustrated, practical survey of our major natural resources, it includes these

Outstanding Features:

1. *Ideas are presented simply, directly, without unnecessary dependence on statistical data.* Instead, *greater stress is placed on concept development.*
2. *Over 230 illustrations,* including drawings, maps, graphs, charts and *over 80 half-tones.*
3. Chapter 2 on unity of all nature and resources offers the most unique discussion of its kind yet developed.
4. Positive approach: the role of the American citizen in conservation is clearly defined.

550 pages • 6″ x 9″ • Published 1956



For approval copies write

Prentice-Hall, Inc. ENGLEWOOD CLIFFS, NEW JERSEY